

Carolina Magro de Santana Braga
Fabiana Maris Versuti

*University of São Paulo,
Ribeirão Preto, Brazil*

Neuroscience and inclusive education: a teacher training program

Abstract. Inclusion is a relevant public policy for education. Nonetheless, the evaluation of its effectiveness still needs further investigation. The existing research literature shows the importance of teachers as a vital agent in this process. In the context of continuing teacher education, the theme of inclusion is often left outside of scholarly attention. This study aims to outline teacher training for inclusive education, especially regarding the inclusion of students with neurodevelopmental disorders. The survey covered 50 kindergarten and elementary private school teachers. Following the intervention, the teachers' spontaneous reports demonstrate a change in their perception of students with disabilities. Further investigation is required to systematize the methodology and results of this survey.

Keywords: inclusive education, teacher training, neuroscience, students with disabilities.

Introduction. Inclusion is an important public policy aimed to promote equity in education for students with disabilities or neurodevelopmental disorders. Studies have been conducted concerning the effectiveness of inclusive education, however, the multiplicity of factors such as the use of different terms, teaching methods, and characteristics of each institution interfere in the analysis of these results [1]. Teachers' perception of students with disabilities can positively impact on the former's expectations and attitudes towards inclusive education [2]. Literature suggests the need for a practical and theoretical teacher training for inclusive education [3]. This study aims to depict such a training program, taking into consideration the concepts of neurodevelopmental disorders, neuroscience, and functionality.

Materials and methods. Fifty teachers from two private kindergarten and elementary schools took part in this study. These institutions have been receiving students with disabilities but had no specific educational plan for them until that moment. The training lasted 16 hours and was conducted in the form of group sessions coordinated by a neuropsychologist. The training comprised two phases: first, dialogic classes concerning concepts of the neuroscience of learning, neurodevelopmental disorders, and the referential of functioning as described by the World Health Organization (2001) [4] and, second, practical activities linking the above-mentioned concepts with the teachers' personal experience and the development of an adapted curriculum suitable for students with disabilities.

Results. At the beginning of the program, the teachers admitted having difficulties in designing a specific proposal for students with disabilities and tended to underestimate such students' learning skills. In the final sessions, the participants started to describe strategies that they had used considering the new knowledge they had acquired during the training. One of the strategies consisted of adapted learning assessments using the following specifications: short and direct questions and commands, keywords highlighted in texts, and focusing only on the most important learning content. Another strategy employed refers to interventions in classes to engage all students in the activities, including students with disabilities. After the application of these strategies, the teachers reported better formal assessment results and improved student motivation. Furthermore, the educators perceived themselves as better prepared for identifying learning difficulties that require specialist evaluation.

Conclusion. These results suggest that instruction about neurodevelopmental disorders, neuroscience, and functioning and provision of relevant methodological support can improve teachers' perceptions of students with disabilities and, consequently, improve these students' academic performance. Further studies in this field could systematize the teacher training methodology and include measurements of pre- and post-training results to provide more evidence of the factors involved in this intervention.

1. Lindsay G. Educational psychology and the effectiveness of inclusive education/mainstreaming // British Journal of Educational Psychology. 2007. № 77. pp. 1–24.

2. Krishler M., Pit-ten Cate I. M. Pre- and In-Service Teachers Attitudes Toward Students With Learning Difficulties and Challenging Behavior // *Frontiers in Psychology*. 2019. № 10(327). pp. 1–10.

3. Silva A. L. S., Silva A. C. S., Feitosa A. C. N., Lima R. G. O processo de inclusão de alunos com deficiência na percepção dos professores // *Carpe Diem: Revista cultural e científica do UNIFACEX*. 2018. № 16(2). pp. 176–187.

4. International classification of functioning, disability, and health: ICF. World Health Organization. 2001.